Setting and Managing Instream Flows in WRIA 1

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Purpose Statement and Presentation Overview

- The purpose of this presentation is to summarize the instream flow setting process in WRIA 1 and to describe how this effort relates to salmon recovery

- Presentation Overview
  - Describe the who, what, when, where, how, and why of the instream flow technical work
  - Describe the instream flow selection and adoption action plan and process
  - Identify the status and next steps
  - Answer questions

Salmon Recovery and Water Resources Management

- In 1998, the Washington State Legislature passed two separate bills – ESHB 2496 (Salmon Recovery) and ESHB 2514 (Watershed Planning).
- For a number of reasons, two separate but related processes were started in WRIA 1 under the terms of two separate inter-governmental MOAs.
- The salmon recovery MOA resulted in the 2005 WRIA 1 Salmon Recovery Plan.
- The watershed planning MOA resulted in the WRIA 1 Watershed Management Project and the 2005 WRIA 1 Watershed Management Plan – Phase 1.
- These efforts are currently being merged.

WRIA 1 Watershed Management Project

- The WRIA 1 Watershed Management Project (see http://wria1project.whatcomcounty.org) had substantial public involvement through the Planning Unit and included four primary technical elements:
  - Water Quantity
  - Water Quality
  - Instream Flow
  - Fish Habitat
- Technical Teams were established for each of these elements and met on a regular basis.
- The inter-governmental Staff Team met weekly and the Planning Unit met monthly over the 1999 through 2005 period.

WRIA 1 Watershed Management Project – Instream Flow

- The goals of the instream flow element of the WRIA 1 Watershed Management Project are to:
  - Restore WRIA 1 salmon populations to healthy and harvestable levels.
  - Accurately estimate the relationship between stream flow and fish habitat quantity and quality for different fish species and life stages in WRIA 1.
  - Integrate the instream flow assessment results with the results from water quantity and water quality elements of the WRIA 1 Watershed Management Project.
  - Support salmon recovery efforts.

WRIA 1 Watershed Management Project

- Why Include the Instream Flow and Fish Habitat Elements in the WRIA 1 Watershed Management Project when they are not required by ESHB 2514?
  - Instream flows are inextricably linked to water quantity and water quality
  - Action was/is needed in response to ESA listing of early run chinook salmon
  - Instream flow needs for fish must be identified to address tribal water right claims
  - Instream flow needs will help determine the amount of water available for out-of-stream uses

Instream Flow and Fish Habitat Technical Teams

- Instream Flow Technical Team Lead:
  - Jeremy Freimund (LIBC)
- Fish Habitat Technical Team Co-Leads:
  - Chris Fairbanks (PUD No. 1)
  - John Thompson (Whatcom County)
- Important other contributors/participants include:
  - Lummi Nation, Nooksack Tribe, WDFW, Ecology, Whatcom County, Utah State University, PUD No. 1, Bellingham, Diking and Drainage Caucus, Environmental Caucus
  - Water Quality Technical Team (Co-Leads: Sue Blake and Becky Peterson)
  - Water Quantity Technical Team (Lead: Llyn Doremus)

Overview of How Was Work Conducted

- Technical Phase
  - ☑ Identify the method(s)/best available science to estimate the relationship between stream flow and fish habitat quantity and quality
  - ☑ Apply selected methods
  - ☑ Recommend an initial ecological flow regime
- Selection and Adoption Phase
  - ☑ Agree to Instream Flow Selection and Adoption Action Plan
  - ☑ Apply the selection and adoption action plan
  - ☐ Adopt an instream flow regime.
- Consensus Decision Making Process

Technical Phase

Technical Phase

- The work products from the Instream Flow and Fish Habitat technical teams include substantial field data and analyses and reflect the results of a large number of consensus decisions that were made over the 1999 through 2006 period.
- These consensus decisions included the following:
  - The most appropriate methods to be used to quantify the relationship between flow and the quality and quantity of fish habitat for various species and life stages throughout WRIA 1.
  - The science team that applied the selected methods.
  - The locations in WRIA 1 where the selected methods were applied by the science team.
  - The habitat suitability criteria that were used.

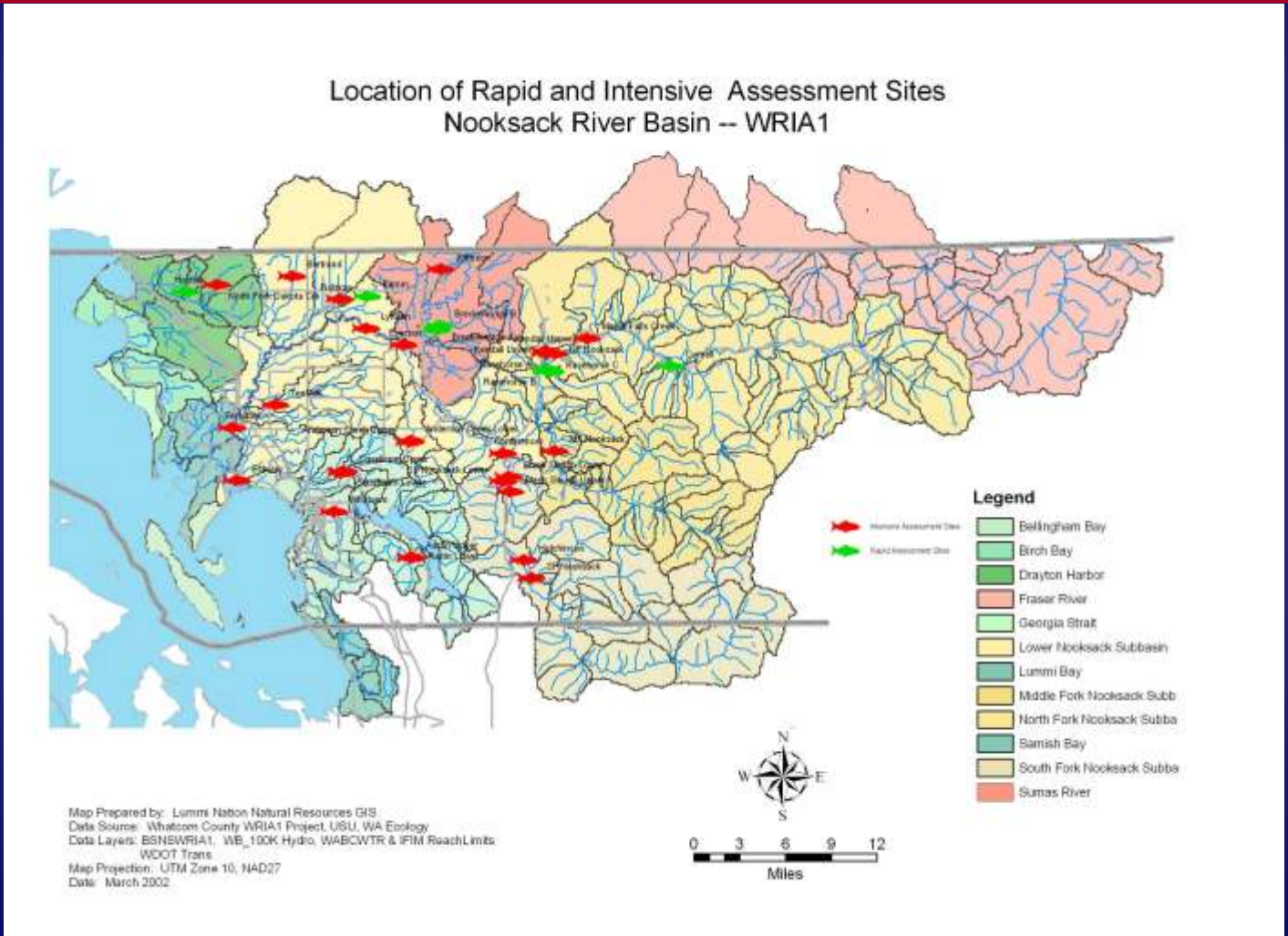
Technical Phase

- Consensus decisions (Continued)
  - WRIA 1 fish periodicity and distribution.
  - Habitat models that were used.
  - How the hydraulic and habitat model results are presented.
  - Appropriate dissolved oxygen and temperature thresholds.
  - Stratification and extrapolation approaches.
  - Independent peer review panel composition (independent review panel was not convened).
  - Fish species and life stage prioritization throughout WRIA 1.
  - How the model results should be summarized for decision makers.

Field Data Collection (2-D Hydraulics)

Habitat Mapping

Study Site Locations



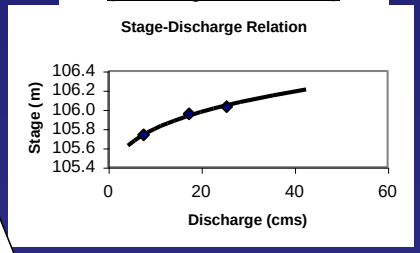
PHABSIM Application

Data Collection

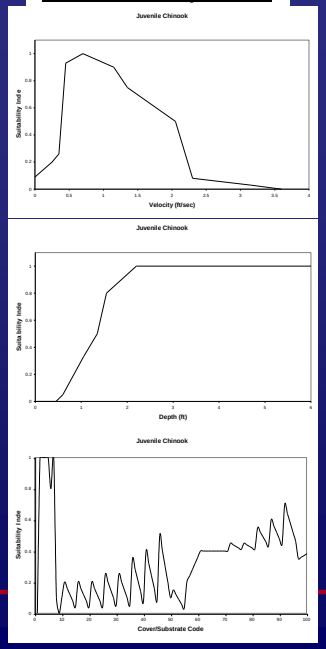
Method Selection
Site Selection
Field Data Collection
Literature Review

Data Analysis

Hydraulic Data and
Channel Structure Representation
(i.e., Computational Mesh)



Habitat Suitability Criteria



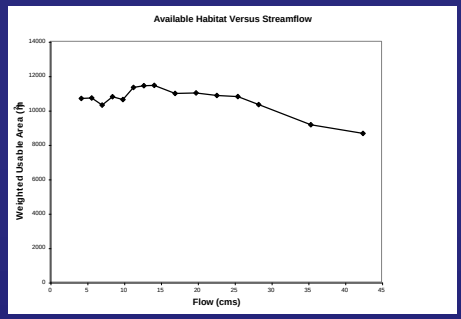
Computer Modeling

Model Calibration

Utah State University Scientists

WRIA 1 Instream Flow and Fish Habitat Technical Teams

Decision Support Information



Technical Phase

- On March 15, 2006, the Instream Flow and Fish Habitat Technical Teams issued a consensus statement that included the following:
  - The technical teams have identified flows that are optimal for priority WRIA 1 fish species and life stages subject to current hydrologic model constraints and fish habitat model limitations.
  - These technical recommendations, along with other technical, policy, and legal considerations, including beneficial out-of-stream water needs and existing and future hydrologic constraints, will be used to negotiate a flow regime that is acceptable to the parties and is then adopted.
  - The recommended initial flows from the technical teams are not to be confused with the instream flows that are to result from the implementation of the Instream Flow Selection and Adoption Action Plan.

Technical Phase Summary

- Field data were collected at a total of 41 sites (22 "intensive" and 19 "rapid assessment") in the watershed over the 2000-2004 period.
- The total cost of the instream flow element is difficult to calculate due to the large amount of in-kind services provided by agency staff and the general public and the difficulty in parsing out the costs of inter-related elements of the WRIA 1 Project (e.g., stream gaging, hydrologic modeling).
- Approximately $1.2 million was expended for the ISF study conducted by Utah State University
- A consensus technical team statement regarding the instream flows was issued on March 15, 2006.

Selection and Adoption Phase

Selection and Adoption Phase

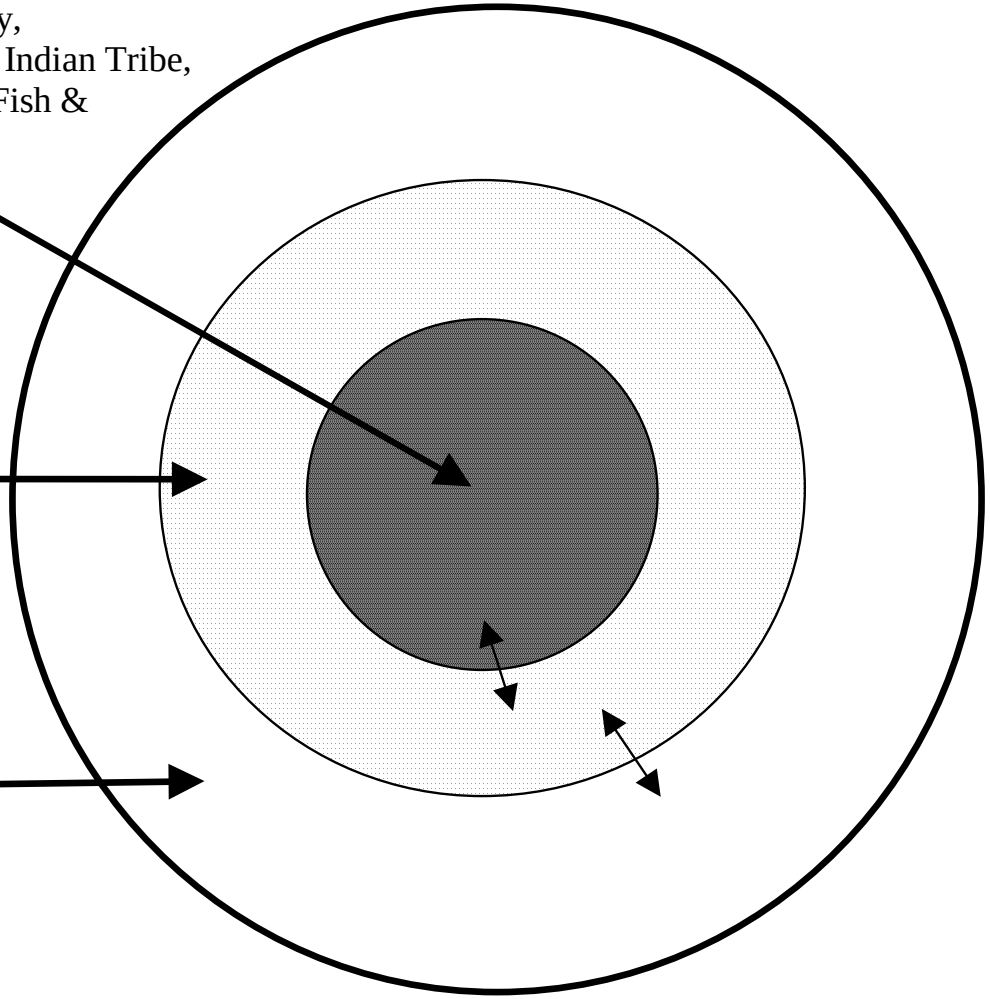
- The Selection and Adoption Phase was initiated during the Technical Phase
- Instream Flow Selection Methodology Symposium May 29-30, 2002 (technical, legal, policy experts)
- In July 2002, the Joint Board established an Inter-governmental Instream Flow Working Group to develop an Instream Flow Selection and Adoption Action Plan
- In June 2005, the Instream Flow Selection and Adoption Action Plan was adopted as part of the WRIA 1 Watershed Management Plan – Version 1
- The Selection and Adoption Action Plan has two "pilot" watersheds: Middle Fork Nooksack and Bertrand Creek

Concentric Circle Model of Consensus Decision-Making

Intergovernmental Working Group
(City of Bellingham, Whatcom County, PUD No.1, Lummi Nation, Nooksack Indian Tribe, Ecology, Washington Department of Fish & Wildlife, NOAA , USFS, and EPA)

Planning Unit
(Governmental and water interest caucus representatives)

WRIA–wide Affected Parties



Status Update/Next Steps

Status Update

- Work on the two pilot watersheds was initiated after June 2005.
- Settlement proposals were developed and exchanged by the parties.
- Efforts in the Bertrand Creek watershed stalled during 2007 for a number of reasons including:
  - Parties realized that the limited geographic scope of the effort limited the settlement opportunities.

Status Update

- Work in the Middle Fork Watershed stalled after April 2006 as the City of Bellingham considered the tribal settlement proposal.
- Work in the Middle Fork Watershed and a look also at the North Fork and South Fork subbasins resumed in October 2008.
- Efforts to reach a settlement have continued since October 2008 with the parties meeting at least monthly and sometimes at two week intervals.

Next Steps

- Once the parties reach a settlement, there will be opportunities for public input and the United States will be asked to agree to the settlement and to file a lawsuit in federal court.
- The federal court will be asked to approve a consent decree and the settlement agreement.
- Efforts to address instream flows in the remainder of the basin will be initiated as soon as the parties reach a settlement agreement in the pilot effort.

Summary and Conclusion

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- Instream flows in the Nooksack River watershed need to be established as soon as possible for numerous reasons including:
  - Water of sufficient quantity and quality is needed instream to:
    - Support a harvestable surplus of salmon,
    - De-list early-run chinook salmon,
    - Preclude other fish from be listed under the ESA,
    - Ensure economic security and development (e.g., recreation, quality of life, tourism), and
    - Address the "senior" tribal water rights.
  - The amount of water available for "junior" out-of-stream uses can not be determined until the "senior" instream flow rights are determined.

Summary and Conclusion

- Resolving conflicts over water allocation is not easy, fast, or cheap.
- The parties have elected to pursue a negotiated settlement to the conflict – more information about this approach can be found on the WRIA 1 Watershed Management Project website (http://wria1project.whatcomcounty.org).
- Alternative approaches to resolving conflicts over water allocation are no easier, faster, or cheaper.

Questions?

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